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ELECTROLYTIC SHARPENING OF SURGICAL INSTRUMENTS

Prof A. Kolen, Director Cen Ophthalmolog Inst imeni Gel'mgol'ts

Uncil recently all the sharpening of surgical instruments was done manually, and frequently the edges were irregular and therefore dangerous as possible causes of infection. In many cases the various institutes, hospitals, and laboratories which received "factory-sharpened" surgical instruments had to resharpen the instruments.

V. Fedurkin and associates at the Laboratory of Metal Plating, All-Union Scientific Research, Institute of Medical Instruments and Equipment, developed a mechanical and automatic method for sharpening surgical instruments. The process involves the electrochemical removal of thin slivers of metal from the cutting edge of the instrument.

Recently, Fedurkin read his report on this electrochemical sharpening method at a meeting of the scientific council of the Ophthalmological Institute imeni Gel'mgol'ts. The report dealt specifically with the sharpening of instruments used in ophthalmotomy and was enthusiastically acclaimed.

The new sharpening method was first carried out at the institute during the latter part of 1948. There were many problems which had to be solved, particularly because each of the various categories of instruments required different periods of processing. A standard table of required periods was eventually developed. Now scores of instruments can be immersed into the electrolytic tank and . narpened very quickly.

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The method is based primarily on the anode dissolving of metal. During the sharpening process, the blades of scalpels are simultaneously polished, with the result that the blade obtains a shiny anticorrosive coating. The apparatus for this new sharpening process is portable and can be mounted almost anywhere. It does not emit harmful gases and can even be assembled and operated right next to the operating table. The apparatus consists of an AC rectifier, a thermo-regulator, and an electrolyte bath containing a special solution. The electrolyte is very stable, and it has been determined that if the unit is operated in dry surroundings and a minimum of water falls into the solution, it can be used for a long time without changing.

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